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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,233	11/14/2003	Don G. Bartell	CML00844T (78933)	2477

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EXAMINER

CHAU, COREY P

ART UNIT PAPER NUMBER

2644

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Please find below and/or attached an Office communication concerning this application or proceeding.

<p align="center">Office Action Summary</p>	Application No. 10/714,233	Applicant(s) BARTELL, DON G.	
	Examiner Corey P Chau	Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-6 and 8-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-6 and 8-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/30/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 3-6, 8-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The specification as originally filed, does not support the limitations of "an acoustic dampener operably coupled between the flexible active display and the flexible audio transducer", wherein the flexible active display and flexible audio transducer are support by a common flexible substrate as claimed in claim 1 now. Claims 20 and 25 are rejected for the same reasons stated above. Claims 3-6, 8-19, and 30 depend on a rejected Claim 1. Claims 21-24 depend on a rejected Claim 20. Claims 26-29 depend on a rejected Claim 25.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 30 recites the limitation "audio transducers proximally

disposed with respect to the flexible active display and **supported by the flexible active display**" which is inconsistent with the specification.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3-5, and 17-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20030109286 to Hack et al. (hereafter as Hack) in view of U.S. Patent No. 6215655 to Heady et al. (hereafter as Heady).

7. Regarding Claim 1, as best understood with regards to the 112, 1st problem as mention above, Hack discloses an intelligent multi-media display communication system comprising: a flexible substrate (i.e. the display system 106 is fabricated on a flexible substrate) (Fig. 2; page 5, paragraph 0051 and 0052; page 6, paragraph 0066); a flexible active display (110) supported by the flexible substrate; and a flexible audio transducer (123) proximally disposed with respect to the flexible active display (Fig. 2) and also supported by the flexible substrate. Hack does not expressly disclose an acoustic dampener operably coupled between the flexible active display and the flexible audio transducer. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide such an acoustic dampener

operably coupled between the flexible active display and the flexible audio transducer in order to reduce vibration therefore reducing communication interference, as taught by Heady (abstract; claim 11).

8. Regarding Claim 3, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses comprising at least a second flexible audio transducer (121) proximally disposed with respect to the flexible active display (Fig. 2)

9. Regarding Claim 4, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses a flexible substrate that supports the flexible active display; and the flexible audio transducer; also supports the at least a second flexible audio transducer (i.e. the display system 106 is fabricated on a flexible substrate) (Fig. 2; page 5, paragraph 0051 and 0052; page 6, paragraph 0066).

10. Regarding Claim 5, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses a plurality of flexible audio transducers (121,123) disposed substantially equidistant from one another about the flexible active display (Fig. 2).

11. Regarding Claim 17, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses a selective rigidizer (113) disposed proximal to the flexible audio transducer (i.e. the rod 113 support the display system vertical) (Fig. 2).

12. Regarding Claim 18, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses a rigid backing disposed at least partially coextensively with the flexible audio transducer (i.e. it is contemplated that the display

substrate can be formed from a smart material that is flexible when the display 106 is retracted, but becomes rigid when the display 10 is extended)(page 5, paragraph 0051).

13. Regarding Claim 19, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses a housing (102) and a retraction mechanism (113) disposed therein that is operably coupled to the flexible active display and the flexible audio transducer (Figs. 2 and 3A-C; page 5, paragraphs 0056 and 0058).

14. Regarding Claim 20, as best understood with regards to the 112, 1st problem as mention above, Hack discloses a method of forming a flexible combined display and speaker apparatus (i.e. intelligent multi-media display communication system)(Fig. 2), comprising: providing a flexible substrate (i.e. the display system 106 is fabricated on a flexible substrate); supporting a flexible active display (110) with the flexible substrate; supporting a flexible speaker (123) with the flexible substrate (Fig. 2; page 5, paragraph 0051 and 0052; page 6, paragraph 0066). Hack does not expressly discloses disposing an acoustic dampener between the flexible active display and the flexible speaker. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide such an acoustic dampener between the flexible active display and the flexible speaker in order to reduce vibration therefore reducing communication interference, as taught by Heady (abstract; claim 11).

15. Regarding Claim 21, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses temporarily disposing the flexible substrate,

and hence the flexible active display and the flexible speaker, in a non-planar configuration (Figs. 3A-C; page 5, paragraphs 0056 and 0058).

16. All elements of Claim 22 are comprehended by Claim 21. Claim 22 is rejected for the reasons stated above apropos to Claim 21.

17. All elements of Claim 23 are comprehended by Claim 21. Claim 23 is rejected for the reasons stated above apropos to Claim 21.

18. Regarding Claim 24, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses folding the flexible substrate (i.e. alternatively, the display 106 can be formed such that it can be folded like a map and attached to either the interior or exterior of the housing 102) (page 5, paragraph 0056).

19. Regarding Claim 25, as best understood with regards to the 112, 1st problem as mention above, Hack discloses an integrated display and speaker (i.e. intelligent multi-media display communication system)(Fig. 2) comprising: flexible display (110) means for selectively providing an active display on a conformably flexible display surface; flexible speaker means (123) integrally configured with respect to the flexible display means for selectively providing audible sound (Fig. 2). Hack does not expressly discloses acoustic dampening means operably and integrally coupled between the flexible display means and the flexible speaker means. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide such acoustic dampening means operably and integrally coupled between the flexible display means and the flexible speaker means in order to reduce vibration therefore reducing communication interference, as taught by Heady (abstract; claim 11).

20. Regarding Claim 30, as best understood with regards to the 112, 1st and 112, 2nd problem as mention above, Hack as modified disclose a speaker 123 (i.e. first flexible audio transducer comprising a speaker) and a speaker 108, which is proximally disposed with respect to the flexible active display (Fig. 2). Hack as modified discloses a speaker 108, but only generally; no specific hardware or software is taught. However it would have been obvious to utilize a speaker such as the thin film speaker 123 as speaker 108, which is thin and flexible, therefore providing a speaker that would not occupy much space (i.e. second flexible audio transducer comprising a speaker). In addition, Hack discloses communication device 100 can also include one or more speakers.

21. Claims 6, 8, 9, 10, 11, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20030109286 to Hack in view of U.S. Patent No. 6215655 to Heady as applied to claims 1, 3-5, and 17-25 above, and further in view of U.S. Patent Application Publication No. US 2003/0222334 to Ikeda et al. (hereafter as Ikeda).

22. Regarding Claim 6, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses a flexible active display and a flexible audio transducer on a flexible substrate, but does not expressly disclose a first flexible substrate that supports the flexible active display, and a second flexible substrate that supports the flexible audio transducer. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a first and

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second flexible substrates in order to provide desired structural properties for the flexible active display and the flexible audio transducer, as taught by Ikeda (page 5, paragraph 66).

23. Regarding Claims 8, 9, 10, and 11, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses a dampener, but does not expressly disclose the dampener comprises a vacuum, or a discontinuous material, wherein the discontinuous material comprises a woven structure or a plurality of holes disposed through the material. However it would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize any known types of dampener such as a vacuum, or a discontinuous material, wherein the discontinuous material comprises a woven structure or a plurality of holes disposed through the material.

24. Regarding Claims 12 and 13, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses a first and second flexible substrate, but does not expressly discloses the first and second flexible substrate comprising a similar material or difference material. However it would have been obvious one having ordinary skill in the art at the time the invention was made to provide the first and second flexible substrate comprising a similar material or difference material in order to provide desired structural properties.

25. Claims 14-16 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application Publication No. 20030109286 to Hack in view

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of U.S. Patent No. 6215655 to Heady as applied to claims 1, 3-5, and 17-25 above, and further in view of "Electroactive Polymer Artificial Muscles Acoustic Applications", by SRI International (hereafter as SRI International).

26. Regarding Claim 14, as best understood with regards to the 112, 1st problem as mention above, Hack as modified discloses a flexible audio transducer (123), wherein the flexible audio transducer is a thin film audio transducer that is thin enough and flexible enough so that the collapsible nature of the display is unaffected, but only generally; no specific hardware is taught. Therefore it would have been obvious to one having ordinary skill in the art to seek known flexible audio transducers. SRI International for example discloses dielectric elastomer electroactive polymer materials for use in a variety of applications, such as loudspeakers (i.e. audio transducer) comprising films of dielectric elastomer polymer, coated on both sides with a compliant electrode material. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ any known flexible speaker, such as that of SRI International. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the flexible speaker of Hack with the teaching of SRI International to utilize a flexible audio transducer comprising films of dielectric elastomer polymer, coated on both sides with a compliant electrode material (i.e. flexible audio transducer is comprised of at least one layer of a dielectric elastomer polymer material).

27. All elements of Claim 15 are comprehended by Claim 14. Claim 15 is rejected for the reasons stated above apropos to Claim 14.

28. All elements of Claim 16 are comprehended by Claim 14. Claim 16 is rejected for the reasons stated above apropos to Claim 14.

29. Claim 26 is essentially similar to Claim 14 and is rejected for the reasons stated above apropos to Claim 14.

30. Claim 27 is essentially similar to Claim 15 and is rejected for the reasons stated above apropos to Claim 15.

31. Claim 28 is essentially similar to Claim 16 and is rejected for the reasons stated above apropos to Claim 16.

32. All elements of Claim 29 are comprehended by Claims 14 and 16. Claim 29 is rejected for the reasons stated above apropos to Claims 14 and 16.

Response to Arguments

33. Applicant's arguments filed 11/15/04 have been fully considered but they are not persuasive.

34. With respect to the applicant's arguments on page 9, stating that, "Although Heady does disclose use of an acoustic dampener in conjunction with a speaker, there is nothing in any of the three reference to suggest that an acoustic dampener be utilized as between a flexible display and a flexible audio transducer, and particularly when those two such elements are supported by a common flexible substrate", have been noted. The Examiner however respectfully disagrees. Hack as modified discloses a display system 106 fabricated on a flexible substrate, wherein a speaker 123, a microphone 121, and a display screen are disposed on the display system 106.

Therefore the speaker 123, microphone 121, and display screen are disposed on a common flexible substrate.

Conclusion

35. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

36. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P Chau whose telephone number is (571)272-7514. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tran Sinh can be reached on (571)272-7564. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 19, 2005


XU MEI
PRIMARY EXAMINER